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TITAN II. RELIABILITY AND AGING  
SURVEILLANCE PROGRAM (RASP) MANAGE-  
MENT PLAN

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This document provides information on the management of the Titan II RASP Program. The plan delineates responsibilities, organization, test development and test conduct flow.

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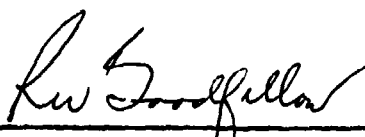
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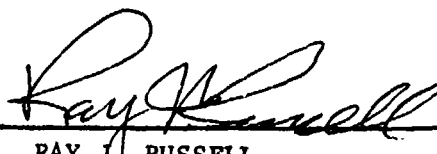
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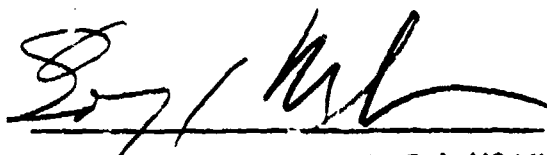
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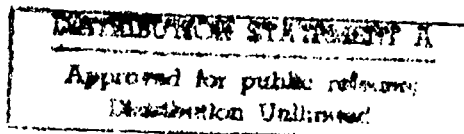
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## 1.0 Introduction

The purpose of this Management Plan is to facilitate the conduct of the Titan II Reliability and Aging Surveillance Program (RASP) by defining the actions required, their sequence and by delineating the organizations with primary support responsibilities for each action.

This plan outlines the general requirements for effective operation of the RASP and specifically assigns responsibilities for RASP management functions. The primary purpose of RASP is testing, accumulation of test and operational data and evaluation of data in order to ascertain current weapon system reliability and forecast aging trends which will influence operation, maintenance and logistic support. Therefore, the major portion of the RASP Management Plan involves establishment of test philosophy, pretest, test and post-test operations and analyses and distribution of test results. The requirements of Air Force Regulation 66-2 (Single Manager for Modification, Major Maintenance and Test Programs on Air Force ICBM Systems) will apply during all types of RASP testing and this plan outlines procedures to assure full compliance with this regulation. Whenever tasks are to be performed by other than SAC personnel or the task is not covered by technical data, the RASP Safety Operating Plan of Appendix A will apply and operating procedures and safety precautions not

included in T.O. 21M-LGM25C-103 series will be prepared as an addendum to this plan to provide compliance with AFR 66-2. In all such cases only Category A testing, as defined by AFR 66-2, will be accomplished within the scope of this program.

The general requirements and responsibilities identified in this RASP Plan support the RASP primary objective which is continued reliability evaluation and monitoring of the effects of age and service on the Titan II missile and associated aerospace ground equipment.

## 2.0 Background

A 14 November 1968 CSAF message informed AFLC and CINCSAC of a 17 October 1968 Program Change Decision directing termination of the Titan II Follow-On Operational Test (FOT) program, and also requested CINCSAC and AFLC to jointly define a bench test/ground surveillance program for continued reliability assessment of the Titan II Weapon System.

Ogden ALC, in conjunction with CINCSAC and San Antonio ALC, developed a proposed Titan II Reliability and Aging Surveillance Program (RASP) which was coordinated with CINCSAC and AFLC Headquarters and submitted to and approved by HQ USAF in July 1969. Initial funding for implementation of the program was received in FY 71.

Extension of the programmed service life of the Titan II Weapon System and frequent difficulties in obtaining replacement parts has made it essential that a more vigorous Aging Surveillance Program be established in order to assure accurate forecasting of wear out trends with sufficient lead time to allow for necessary maintenance, engineering and logistic actions to be accomplished without degrading weapon system reliability.

The types of tests conducted and the data recorded in past flight programs assured design compliance with the Specific Operational Requirement (SOR).



The high success ratio of the DASO, OT and FOT programs established an acceptable reliability estimate and confidence factor through mid-1969. However, an integrated reliability and aging surveillance test program was required to assure that Titan II operational reliability is adequately assessed and maintained under the modified service life requirements and the curtailed flight testing philosophy currently in effect.

### **3.0 Program Scope**

The RASP provides ground testing to supplement limited launch and flight test data required for evaluation of weapon system reliability and for maintaining cognizance of any aging phenomena occurring within the various AVE, OGE, MGE and etc. The types of tests conducted provide both attribute (go/no-go) and variables (performance) data. The rate of test data generation must be adequate to provide confidence in reliability predictions and to assure that an aging degradation which will adversely affect performance, maintainability or logistics will be isolated and corrective action initiated expeditiously.

Operational Ready Rate, Communication System and Re-entry Vehicle/Warhead Reliability are evaluated by other complementary programs.

Where possible, data presently available from SAC operational and maintenance inspections, will be utilized to minimize requirements for additional testing.

The actual RASP testing will be as follows:

- (a) Phase I testing will be performed on at least two missiles per year.

This testing includes the entire series of RASF tests and requires recycling of the missile. Recycling of the missile will be accomplished in conjunction with other established program requirements whenever possible.

(b) Phase II testing will be performed on at least four missiles per year. The Phase II test is a condensed version of the Phase I test and only includes in-silo testing.

(c) Phase III testing will be accomplished as scheduled by the scheduling committee identified in Section 6.0 of this plan. The Phase III testing provides for evaluation of the Guidance System serviceability and accuracy.

A detailed explanation of Phase I and Phase II testing is presented in Section 6.7 of this plan.

Type I testing is defined as that testing to be accomplished within technical data, i.e., TO's or SAC Civil Engineering Manuals (CEMS). Type I, by definition, is Phase I, Phase II and Phase III testing.

Type II testing is that testing to be accomplished by depot or contractor personnel with or without SAC assistance or for which there is no validated and verified technical data. The RASP Safety Operating Plan will be utilized for accomplishing each Type II test. Type II testing may be accomplished during Phase I, Phase II and Phase III RASP testing, dependent upon the specific test requirements. Specific Minor Activity Memo (MAM)/Implementation Management Plan (IMP) inputs and a detailed explanation of Type II testing are presented in 6.3.

Equipment discrepancies detected during RASP testing will be documented by the SAC unit using procedures prescribed in T.O. 00-35D-54.

#### 4.0 Program Objectives

The major program objectives are:

Assure insofar as possible that the present and future operational reliability of the Weapon System can be realistically defined.

Monitor all Titan II AVE, OGE and MGE to the extent that aging trends within specific hardware can be identified with sufficient lead time to accomplish corrective action prior to an adverse impact on weapon system reliability and maintainability.

Provide management visibility into future testing, surveillance and maintenance methods which will be needed to maintain or improve the overall weapon system reliability and availability. Provide for the evaluation of effectiveness of routine inspections and maintenance practices and submit forecasts of anticipated changes in spares usage rates and requirements for unprogrammed equipment maintenance.

The RASP program was created to provide success/failure and performance test data on all hardware throughout the operational life on the weapon system. Measurements of launch and/or flight-critical functional parameters, within the operational or simulated operational environment, will be obtained periodically and used to evaluate current and future system reliability. Test results

will also be evaluated to detect and define any aging trends which develop in the weapon system, and to provide insight and recommendations for alleviating future problems.

## **5.0 Program Description**

The RASP program will accomplish reliability and aging surveillance testing, data collection, hardware and data analysis and statistical evaluation to determine aging characteristics, current reliability and predicted reliability throughout the life of the weapon system. Routine maintenance data and maintenance data obtained through completion of special data sheets will be utilized to maximize the availability of information with the least amount of additional testing.

The following activities must be accomplished before field tests are initiated:

Engineering and statistical analyses to determine what equipment should be tested, how it should be tested and how often it should be tested.

Preparation of test procedures to govern each test and to specify test data to be collected.

Establishment of performance limits and failure criteria for critical system functional parameters to be measured.

All RASP testing will be accomplished at one of three levels: (1) In-silo testing which is primarily systems oriented testing; (2) Missile Inspection and Maintenance Shop (MIMS) testing which primarily involves airframe inspections, wiring checks and MGE evaluation; or (3) Depot or contractor laboratory

testing which is primarily component oriented. RASP testing may be further identified as Phase I, Phase II or Phase III type testing.

The Phase I test includes in-silo, MIMS and laboratory testing and requires a missile recycle. The Phase II test is a condensed version of the Phase I test and involves flight controls tests, Combined Systems Test, and limited MIMS testing. Flow charts for the Phase I and Phase II tests are included in Section 6.7 of this Plan. Phase III testing involves only the guidance system and will be conducted in accordance with T.O. 21M-LGM25C-103-1.

To obtain reliability estimates and aging trends from these test data, the RASP must also accomplish the following:

- 1 Develop appropriate mathematical models of the system.
- 2 Develop and implement procedures for collection, storage and retrieval for both raw test data and analyzed results.
- 3 Select or develop analytical and statistical techniques to obtain reliability estimates and aging trends.

A program review will be accomplished periodically and engineering test reports will be prepared and disseminated. Hardware performance will be evaluated and actions deemed necessary will be taken by the responsible organization.

## **6.0 Program Conduct**

Sections 6.0 through 6.9 describe the actual management and operation of the RASP program. Organizational responsibilities and procedures for implementation of the RASP are also presented.

Overall program direction is provided by a RASP Test Committee consisting of representatives from the following organizations:

<u>SAC</u>	<u>OGDEN ALC</u>
*LGBT	*MMER
XPQM	*MMCO
BM	MMCP
DEFS	MMCR
DOKM	MMCT
DOTM	MMEW
DOXX	
XPQT	

\* Indicates Scheduling Subcommittee Member

Ogden ALC, Service Engineering Division, Reliability Branch (MMER) has been designated the office of prime responsibility for the program by the System Manager (MMC) because the primary objective of the RASP is continued reliability evaluation and monitoring of the effects of age and service on the Titan II Weapon System. This responsibility includes publication and dissemination of reports and information. CINCSAC/LGBT is designated office of prime responsibility at SAC.



Overall program operation is presented by the flow chart, Figure 1. Each block on this chart contains the name of a RASP activity, the organization(s) primarily responsible for this activity, and a section number referencing a part of this Management Plan. Each activity, and the organizational responsibilities associated with that activity, is described by the Section identified in that activity block.

Flow charts identifying Phase I and Phase II RASP Testing Sequences and an organizational chart identifying the Single Point Management responsibility are provided in Section 6.7 of this Plan. Test scheduling as outlined in Paragraph 6.5 will be accomplished and reviewed at least semiannually by the scheduling subcommittee composed of CINCSAC/LGBT and Ogden ALC/MMCO and MMER. LGBT will have primary responsibility for scheduling field testing. However, the support required from other involved agencies will be considered in preparation of testing schedules. Additional subcommittee meetings will be scheduled as required.

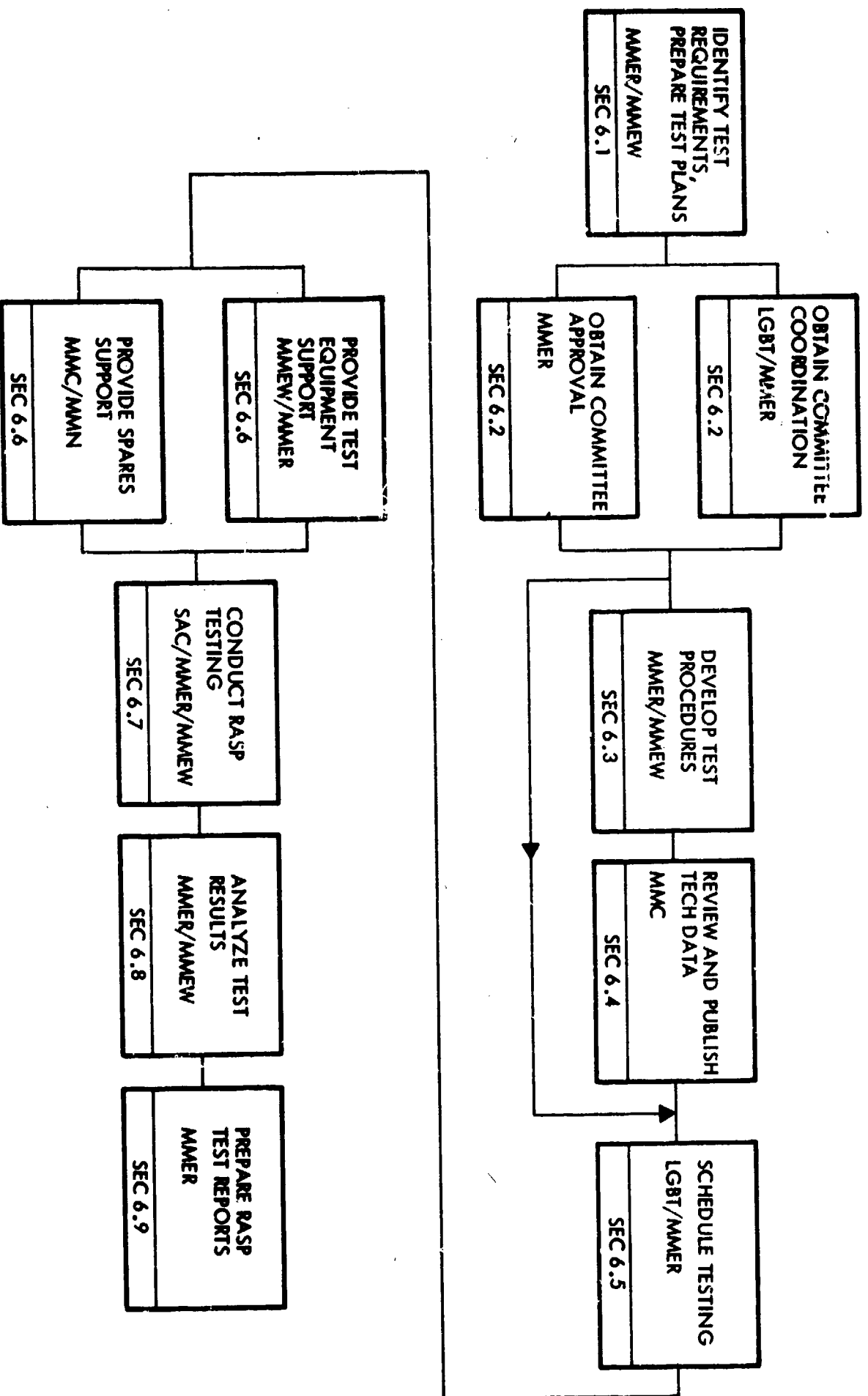


Figure 1 - Program Flow

## **6.1 Test Identification and Test Plan Preparation**

This Section describes how RASP test requirements are identified and test plans prepared. The responsibilities for selection of particular hardware for testing and the numbers of tests necessary to meet program objectives are identified.

Ogden ALC/MMER has the primary responsibility for recommending the types of hardware to be tested and the number of tests (testing rate) to be performed on each hardware item. All RASP test committee members are encouraged to submit their testing recommendations to MMER and all major Titan II contractors will be given the opportunity to review RASP testing plans and make testing recommendations. MMER will review all testing recommendations, consolidate them and prepare a summary test plan for presentation at each RASP test committee meeting.

Much of the selected RASP testing is dictated by the requirement that all launch and flight critical hardware must be tested and/or inspected to determine whether or not a missile, believed to be operationally ready, could have been launched and successfully completed its assigned mission/flight profile. RASP AVE, OGE and MGE tests are assigned priorities as to frequency and detail in accordance with the susceptibility of the equipment to age degradation.

Aging surveillance data must also be collected on all hardware and soft goods (i.e., AVE, OGE and MGE) which are susceptible to age or maintenance-induced performance degradation. These data are required to meet the second major objective of the RASP program which is to detect performance changes and predict future reliability degradation. All RASP reliability testing must be conducted under conditions which, wherever possible, duplicate or simulate the operational launch and/or flight environment. RASP aging and surveillance testing must be capable of assessing performance changes in order to assure necessary actions required to maintain equipment serviceability are expeditiously initiated.

The summary test plans prepared by MMER for presentation at each committee meeting will include a list of recommended testing, spares requirements, engineering and depot level support requirements and estimates of costs and missile system downtime anticipated for the coming fiscal year. In addition to the above information, any recommendations for new testing, not previously approved by the committee, must also include the purpose of the test, test equipment and data requirements. A package containing all of the above information for each new test will be provided by MMER to each committee member at least 30 days prior to the committee meeting from which a decision on the test is desired.

## 6.2 RASP Test Committee Approval and Coordination

This Section identifies the authority and responsibilities of the RASP Test Committee and describes the guidelines under which it will operate.

RASP Test Committee meetings will be held at least once per year. MMER will schedule and chair test meetings and prepare and distribute meeting minutes. At least 30 days prior to each committee meeting, MMER will submit to each member organization a summary test plan itemizing all new RASP testing being recommended for the coming fiscal year.

Committee members will review recommended testing and indicate concurrence or nonconcurrence based on their ability to provide the support required to accomplish the testing. Approval of RASP testing will require the concurrence of the RASP Test Committee. When special test requirements arise and time constraints preclude use of the normal test approval cycle, approval may be given by those committee members whose participation is required to accomplish that testing. For example, should test data be needed to complete an urgent Material Improvement Project (MIP), these data might be obtained during a previously scheduled RASP test.

### 6.3 Test Procedure Development

This Section delineates the responsibilities for development and publication of RASP test procedures.

All test procedure requirements will be identified by MMER and furnished to MMEW at least 120 days prior to the desired test date. MMEW will review these requirements and prepare detailed procedures which will include: test purpose, test measurements to be taken, data to be recorded, test data sheets, special safety requirements and precautions or instructions required. All new test procedures are preliminary type technical data and must be in T.O. format per MIL-M-38784 and signed off by the appropriate organizations prior to presentation to SAC. MMEW will provide MMER with copies of these procedures at least 110 days prior to start of testing and MMER will review each one to assure that the reliability and/or aging surveillance goals are met for each test. At least 70 days prior to the desired test date for all Type II testing, MMER will provide CINCSAC/LGBT with a Minor Activity Memo (MAM) or Implementation Management Plan (IMP), subsequent to coordination with Ogden ALC/SE. Pertinent inputs will consist of specific test procedures, operating and implementing instructions and a system/subsystem Hazard Analysis, if required. Such items will be prepared as an addendum to this plan

and the RASP Safety Operating Plan of Appendix A will apply. Control of IMPs/MAMs will be accomplished by MMCP. A control number will be assigned to each. Control numbers will be structured as follows: IMP - ALC designator - Fiscal Year - Wing Number - Numerical Sequence.

CINCSAC/1 GBT will review the procedures, select a Missile Wing to assist in the initial performance of each new test procedure and provide that Wing with copies of the new procedure at least 60 days before the test date.

MME will provide depot engineering support for Type I testing and act as Single Manager for Type II testing. MMER will prepare a draft copy of each newly-validated and verified test procedure for delivery to MMC.

Component testing, other than Service Life Analysis Program (SLAP) engine testing, will generally be of the acceptance type for which technical data are already available. SLAP engine tests are conducted in accordance with T.O. 2K1LR-87-13 for Stage I engines and T.O. 2K-LR-91-13 for Stage II. When new component tests are approved for implementation and the required test procedures are not available, MMER and MMEW will jointly provide them. Component testing performed at depot or contractor laboratory facilities will not require formal Technical Data.

#### **6.4 Publication of Technical Data**

This Section describes the responsibilities for Technical Data preparation.

MMER will provide MMCT with copies of validated/verified test procedures in Technical Data format (MIL-M-38784) for all RASP field testing requirements. MMCT will manage preparation of the preliminary type technical data through review and approval of validated test procedures and publication of formal Technical Data.

All RASP field Technical Data developed and used exclusively by the RASP will be contained in T.O. 21M-LGM25C-103 series. Technical Data already in use or prepared for use in normal operation or maintenance of the Titan II Weapon System and also used in the RASP will not be included in T.O. 21M-LGM25C-103 series. These Technical Data will be referenced in the RASP T.O. so that they will be used at the appropriate times during RASP testing.

T.O. 21M-LGM25C-103 series will be composed of three sections. Section I will contain general information on safety precautions, special tools and equipment and descriptions of each test. Section II will contain the actual test procedures and Section III will contain test flow (sequence) charts for Phase I, Phase II and Phase III RASP tests.



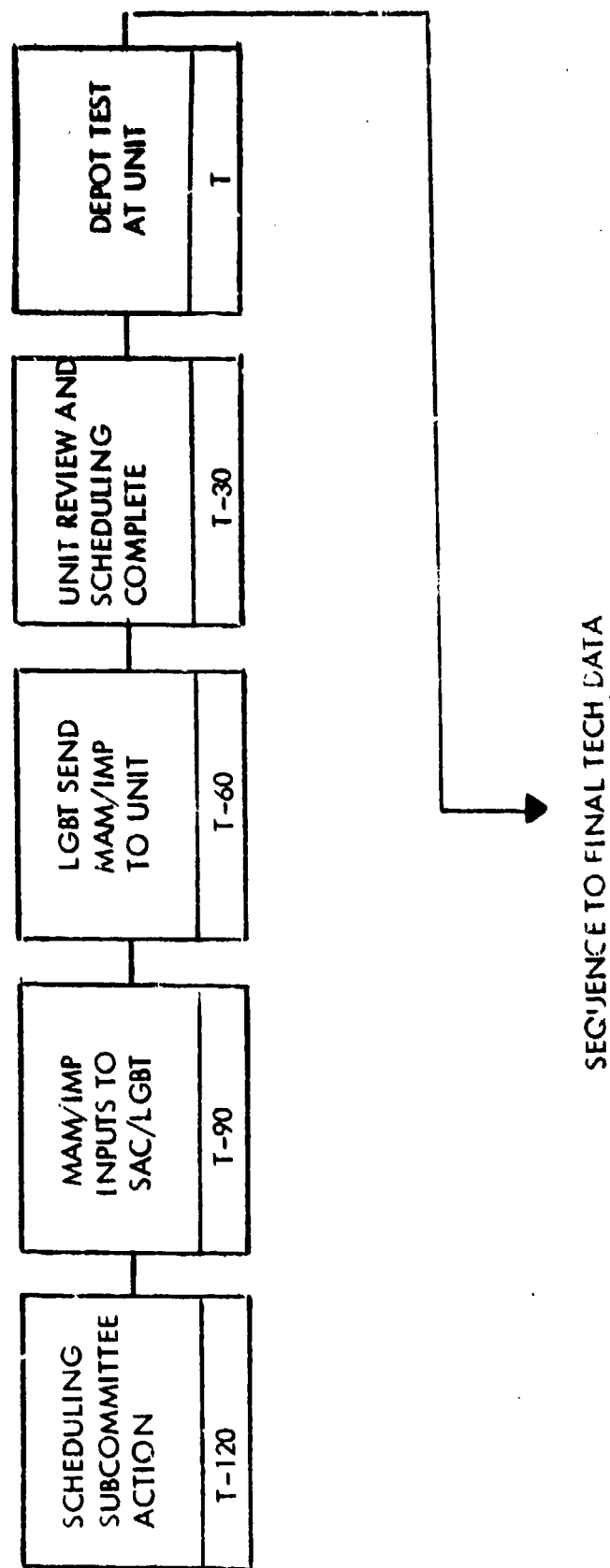


Figure 2 - Type II Testing Flow

## **6.5 Test Scheduling**

**This Section describes how tests are scheduled and coordinated.**

**Preliminary scheduling of testing and required support will be accomplished semiannually by the Scheduling Subcommittee. All testing will be scheduled at least 120 days in advance and all Scheduling Committee members must coordinate on the schedule.**

**Phase I RASP testing will be scheduled in conjunction with a missile recycle for the SLAP or Ballistic Missile Defense Test Target Program (BMDTTP) whenever possible. Special RASP Phase I recycles will be scheduled when the above two program schedules do not provide necessary recycles to meet RASP sampling requirements (Reference Section 3.0). Phase I testing on BMDTTP missiles will be limited to non-destructive inspection type testing. Component removal for further analysis and testing at depot or contractor laboratory facilities will not be incorporated in the BMDTTP missile test. BMDTTP missile configuration will not be altered except for identified component failures requiring removal and replacement. Phase II RASP testing may be scheduled in conjunction with other less extensive maintenance activities such as Re-entry Vehicle recycles when convenient.**

CINCSAC/LGBT will coordinate Phase I RASP field test schedule changes with other interested SAC units and with Ogden ALC/MME and MMC. CINCSAC/LGBT will schedule all field tests not requiring depot support (primarily Phase II testing) and coordinate said schedule with SAC field units involved in the testing. Coordination will include such considerations as SAC, Depot and Contractor manpower requirements, test equipment and spares availability.

#### **6.6 Spares and Test Equipment Support**

This Section describes the spares and test equipment support responsibilities for RASP testing. Spares must be available to replace all components scheduled for removal from an operational missile, launch complex or MGE unit. The appropriate test equipment must be identified and be made available to conduct RASP testing.

By 1 January of each year, MMER will provide CINCSAC/LGBT, Ogden ALC/MMEW, MMCO, MMCR and MMNRAM, a list of all components which are scheduled for removal and testing during the forthcoming fiscal year. MMER will notify MMCR and MMNRAM of specific components to be removed 90 days prior to scheduled test and request disposition instructions for components following test. MMER will coordinate availability of spares with MMCR at least 60 days prior to scheduled test start date and will notify SAC/LGM, at the base undergoing RASP testing, of which spares to requisition as well as providing shipping instructions for component test specimens. Although SAC/LGM bears overall responsibility for the Wing participation in RASP testing, LGME will act as local office of prime responsibility. LGME will assure that Wing functions are accomplished as outlined below. The SAC/LGMM unit will requisition spares at least 45 days prior to each scheduled test date. The SAC/

LGMM unit will ship the test components as soon as possible after they have been removed from the missile and forward a copy of the bill of lading to MMER. This does not apply to missiles selected for BMDTTP support.

Copies of all correspondence concerning RASP test component removal and shipping instructions will be provided to CINCSAC/LGBT.

MMER and/or MMEW will verify that the required test equipment is available at least 60 days prior to the scheduled test date. SAC/LGME (at the base undergoing RASP testing) will verify the receipt of, and operable condition of, all spares and test equipment at least 15 days before the scheduled test date.

SAC/LGME will immediately notify CINCSAC/LGBT of any support suspense date which cannot be met.

## **6.7 Test Conduct**

**This Section identifies the responsibilities for conduct of RASP testing.**

**Ogden ALC/MMER, MMEW or their designated representative will: (1) act as test conductor for all RASP testing; assuming technical responsibility for all on-site testing; (2) act as Single Manager during the conduct of Type II RASP testing for which procedures are being validated by Ogden ALC or contractor personnel or for tests which are primarily performed by Ogden ALC or contractor personnel due to their technical or safety aspects. SAC Strategic Missile Wing (SMW) will assist with all RASP testing as necessary. SAC/LGME will act as Wing Office of Prime Responsibility for all RASP activity.**

**Whenever formal Technical Data are not available, Ogden ALC/MME will provide appropriate MAM/IMP inputs and the RASP Safety Operating Plan of Appendix A will apply. The Complex Missile Combat Crew Commander or his Deputy will be responsible for on-complex safety during Type I testing conducted solely by SAC personnel assisted by Ogden ALC. The site maintenance officer shall maintain responsibility for normal maintenance during recycle efforts which do not directly affect RASP testing. Any discrepancies discovered by normal maintenance procedures during the conduct of**

RASP field test could degrade test results. All such occurrences will be reported to the test conductor prior to initiation of corrective action.

All field level testing will be conducted in accordance with the T.O. 21M-LGM25C-103 series or engineering test directives. Equipment required for this testing is field level as specified in the table of allowances of equipment with the exception of special tools and equipment to be provided by SAC/LGME.

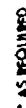
SAC field personnel will record all test data required to be recorded by the T.O. 21M-LGM25C-103 series. SAC/LGME will forward all test data within 10 days following test completion to Ogden ALC/MMER with a narrative description of any anomalies encountered during RASP testing.

Components scheduled for bench or laboratory testing will normally be selected from missiles undergoing Phase I RASP testing. These components will be removed in the MIMS area after Phase I systems testing has been completed. SAC/LGM personnel will remove the components and SAC/LGMM will ship them in accordance with Ogden ALC/MMER instructions.

MMER and/or MMEW will provide engineering supervision for RASP component testing as required. Any deviations from the detailed test procedures will require prior coordination and approval by MMER, MMEW and MMCT.

Upon completion of each component's testing, disposition instructions will be obtained from MMCR.





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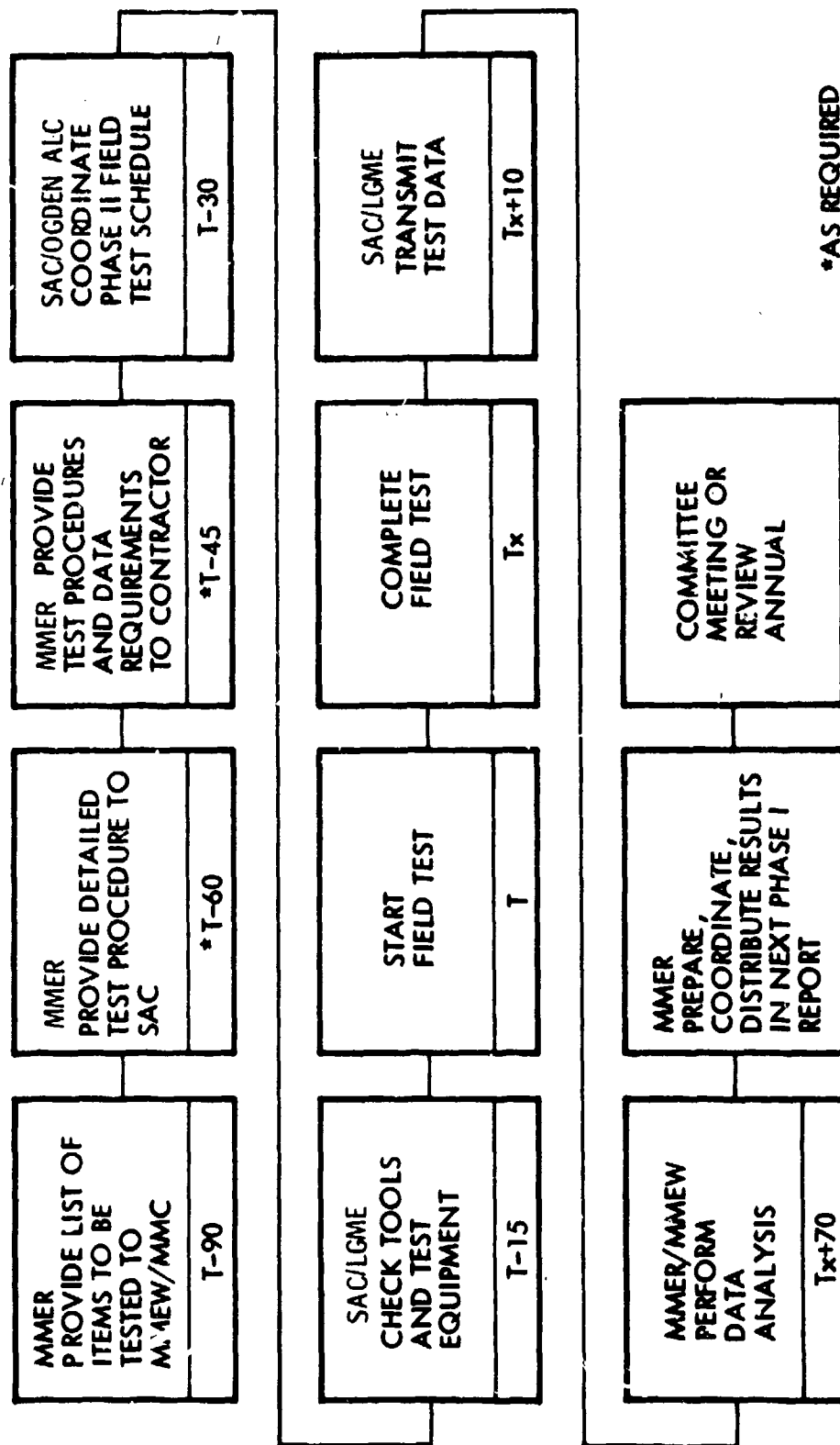


Figure 4 - Titan II Rasp Program  
Phase II Test Flow

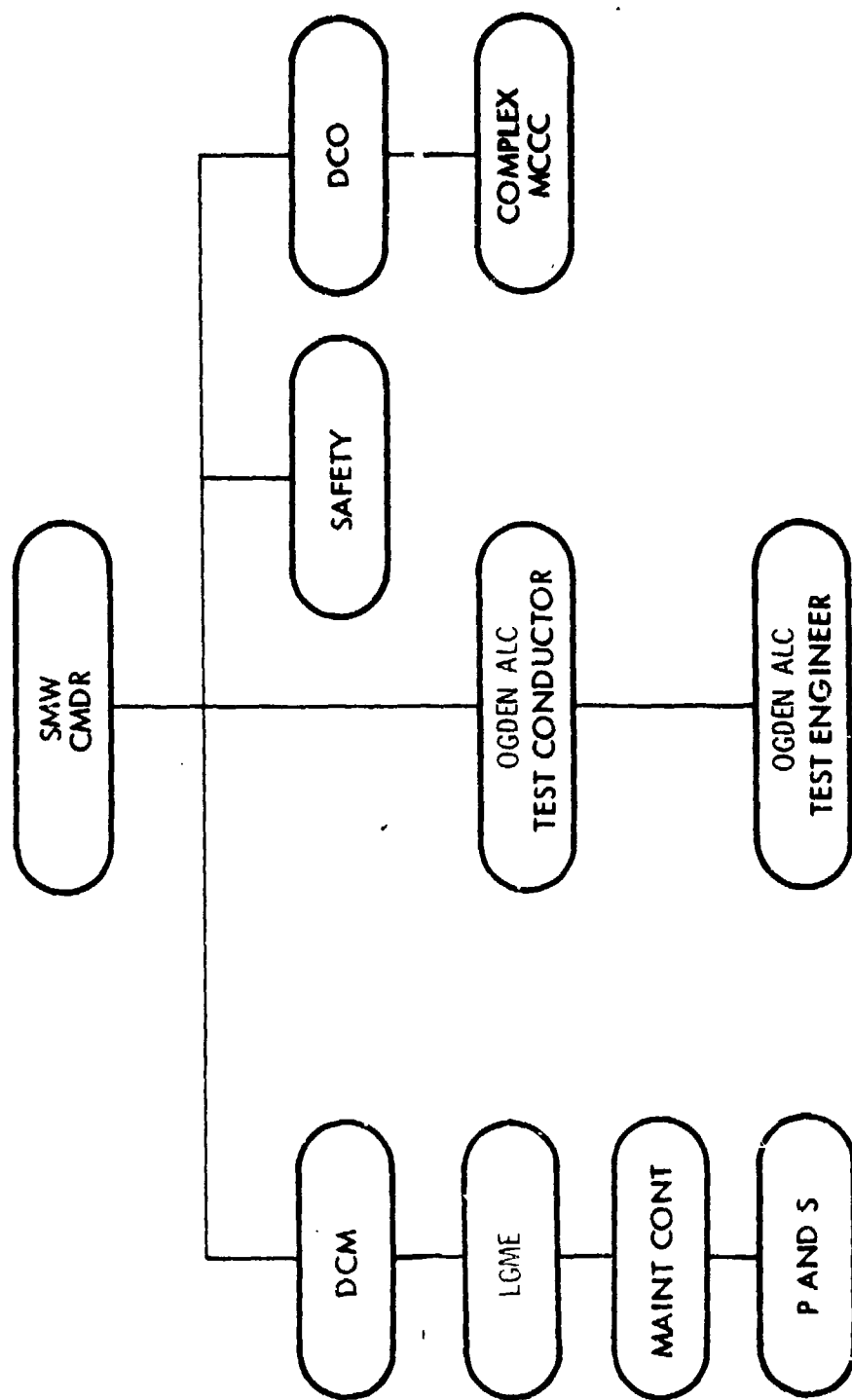


Figure 5 - Organizational Chart for RASP Testing

#### **6.8 Test Data Management and Hardware Analysis**

This Section identifies the responsibilities for data management and hardware analysis.

MMER will receive all RASP data and hardware analyses, reduce these data, compare them with other data to detect failure and aging trends and prepare reliability and service life estimates. These data will be managed by MMER using the RASP "Automated Data Storage, Retrieval and Analysis System," (D-180). This System will provide for rapid calculation of reliability estimates and aging trends on a demand basis. Analysis routines will include calculation of confidence limits, tolerance intervals and regression lines.

The Records Section, LGMX, at each Titan II Wing will forward all AFTO Forms 209 and 349 for Titan II ICBMs and associated AGE to MMER upon completion of the normal retention period directed by AFMs 12-20 and 12-50. The records will be shipped once per month not later than the tenth working day of each month. These records will be used by MMER in the D-180 system to maintain configuration age distributions for components. These distributions will be integrated with reliability versus age distributions to obtain accurate force reliability estimates.

In order to minimize the volume of special testing required to obtain increasing RASP data, existing testing in compliance with scheduled maintenance requirements will be utilized when the testing is considered adequate to assess reliability/aging effects. Therefore, SAC/LGME will be directed by CINCSAC/LGBT to provide specific data obtained during maintenance actions, as required.

MMEW will be responsible for all hardware analyses required as a result of RASP testing. This type of analysis will be required when performance anomalies or failures occur which require specialized knowledge to evaluate. These analyses should determine the cause of the failure, its impact on the operational force, and suggested corrective action required. Material Improvement Projects will be established by MMCT if deemed necessary.

## **6.9 RASP Reporting**

This Section identifies RASP reporting requirements and responsibilities. Engineering test reports will be prepared and distributed by MMER at the conclusion of each Phase I test.

The purpose of the RASP Engineering Test Report is to present test results and engineering, mathematical and statistical analyses of hardware performance observed during RASP testing. Age regression analyses and other trend studies are presented in these reports so that pictorial images of the changes taking place in the system are provided to concerned Air Force agencies. The topics in this report are derived not only from analysis of RASP test data, but also from a continuing review of routine field maintenance reports such as HAF-A48, AFTO Forms 349 and 209 and Unsatisfactory Reports (URs). Historical files of test data from the SLAP and Long Term Readiness Evaluation (LTRE) programs are also used to formulate a broad perspective of the changes taking place in the hardware performance.

RASP Engineering Test Reports are distributed to all interested Air Force agencies. Classified reliability data and reports will be published as part of the System Effectiveness Status Report (IRCS LOG-MM(Q)7372).

## 7.0 Program Review

MMER will present the results of all RASP activities for the preceding year to the RASP Test Committee during each annual committee meeting. Committee members will review the results of this testing and the reliability status of the Titan II Weapon System.

Conclusions concerning performance of the program will be obtained from the periodic RASP Engineering Test Reports and from Titan II Quarterly System Effectiveness ( $S_e$ ) Reports. The RASP provides much of the launch and in-flight reliability data used in evaluating Titan II System Reliability and therefore the influence that the RASP has had on the Titan II System Reliability can be determined by comparing  $S_e$  reports before and after major RASP tests.

Once conclusions are drawn concerning the recent performance of the program, decisions will be made about changes, additions or deletions to future RASP testing and analysis.

## APPENDIX A

### RASP SAFETY OPERATING PLAN

#### 1.0 Introduction

This plan establishes and implements the requirements for a systematized safety effort for work to be accomplished as a part of all Reliability and Aging Surveillance (RASP) testing for which formal technical data are not available. It is intended to assure optimum freedom from inadvertent and destructive mishaps from airborne equipment, facilities, and procedural or personnel deficiencies, either singularly or in combination.

#### 2.0 Purpose and Scope

The purpose of this plan is to organize and implement a total safety program for RASP testing which must be accomplished without formal technical data. The following conditions will be adhered to:

- a. An Ogden ALC Single Manager will be appointed for each test effort, as shown in Figure 1.
- b. A system/subsystem engineering safety hazard analysis will be accomplished for each new RASP test prior to its initial accomplishment.
- c. The activities of RASP testing personnel while on base or at the missile complexes will be conducted in accordance with applicable Base, SAC



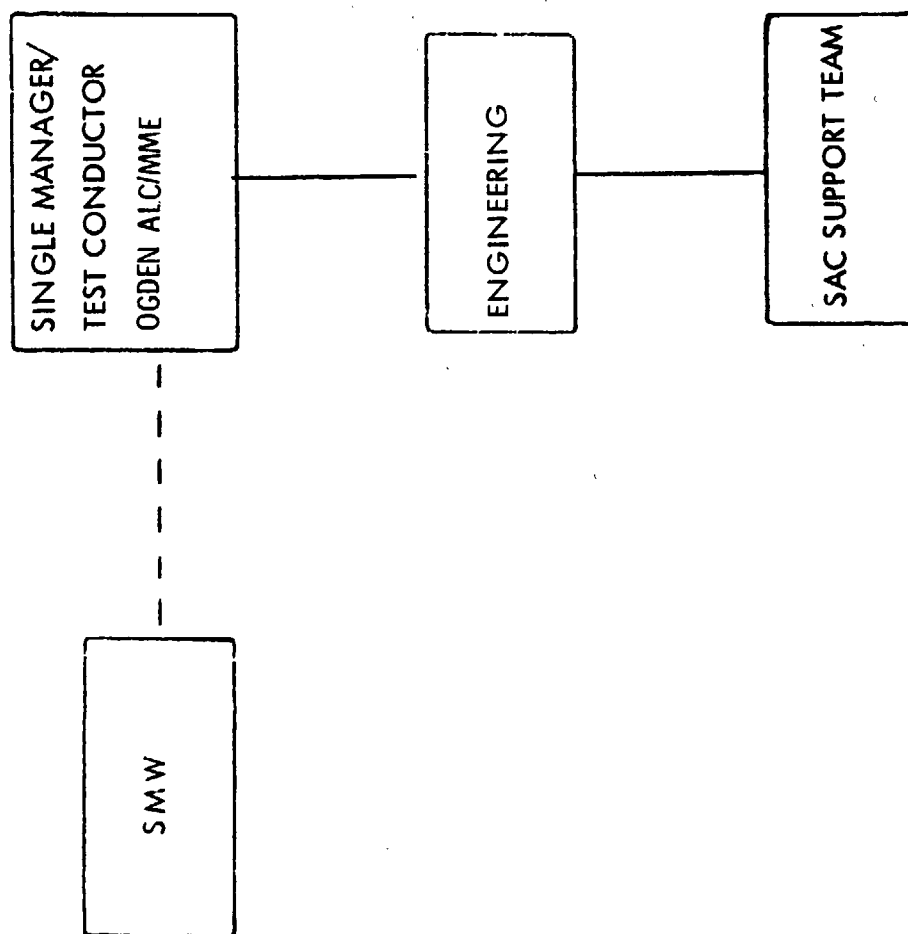


Figure 1 - Organization/Function Chart

and Air Force regulations and this plan. When circumstances develop that are not identified herein, assessment and resolution will be achieved by SAC/SMW and Ogden ALC/MME.

d. Responsibilities of all agencies participating in each new RASP test are defined in Paragraph 4.0, as they pertain to the Safety Program.

e. This plan, with the applicable Hazard Analysis, forms a part of all new RASP testing.

f. The Single Manager and Weapon System Engineer will meet with SMW Safety personnel to insure that all safety requirements including local requirements are understood.

### 3.0 Applicable Documents

a. Air Force Technical Orders, as referenced in applicable Operating and Implementing Instructions provided for specific tests, will form a part of this plan.

b. Reference Documents:

- (1) AFM 127-100, Explosive Safety Manual.
- (2) AFM 127-101, Industrial Safety Accident Prevention Handbook.
- (3) AFM 127-201, Missile Accident Prevention
- (4) SACM 127-2, SAC Accident Prevention Program.

- (5) SACR 355-3, Missile Potential Hazard Procedures.
- (6) AFR 66-2, Single Manager for Modification, Major Maintenance and Test Programs on Air Force ICBM Systems.
- (7) AFM 127-1, Aircraft Accident Prevention Investigation
- (8) SACM 355-5, Disaster Preparedness - Disaster Control Teams.
- (9) T.O. 21M-LGM25C-1, Missile Weapon System Operational Manual.
- (10) AFR 122-62(S), Safety Rules for the LGM-25C (Titan II) MK 6 RV/MK 53 Weapons System.
- (11) SACM 122-2, Volumes I and IV, SAC Two-Man Policy.
- (12) T.O. 21M-LGM25C-2-12, Missile Propellant System.
- (13) T.O. 21M-LGM25C-112, Technical Manual - Maintenance Concept and Activities.

#### 4.0 Responsibilities

##### a. Ogden ALC Responsibilities

Through its designated Single Manager, Ogden ALC/MME will be responsible for the safe operational control of the test work during the period that test personnel are on complex. Applicable safety precautions outlined in the Reference Documents of Section 3b will be adhered to at all times. The

Single Manager will be a member of the Missile Potential Hazard Team for emergencies and will support Accident Investigations as required.

**b. SMW Responsibilities**

SMW will provide necessary safety assistance to the Ogden ALC Single Manager during the performance of this task. The SAC Missile Potential Hazard Team Chief will serve as Director of Emergency Operations and will be responsive to any related emergencies. Final authority on all matters pertaining to safety will rest with the SMW Commander, who will direct the conduct of any accident investigation.

**5.0 Complex Briefings and Walk-Throughs**

**a. Pre-Activity**

The Single Manager will perform a daily prior-to-work walk-through and technical interchange with the Missile Combat Crew Commander (MCCC). Briefings and discussions will cover the following areas as applicable:

- (1) Complex configuration and safety status.
- (2) Special safety equipment and procedures required for the task and specified in the Hazard Analysis.
- (3) Personal safety equipment requirements (i.e., hard hats, respirators, ear plugs, etc.).

(4) Danger Tags in effect and to be placed for the scheduled test activity.

(5) Evacuation conditions and procedures along with the primary and secondary egress routes from the specific work and test areas.

(6) Any revisions to safety requirements and procedures.

b. Post Activity

The Single Manager will perform a button-up walk-through and technical interchange with the MCCC after completion of each day's activities. Any discrepancies will be entered in the complex forms by the Missile Combat Crew (MCC).

6.0 Access and Work Control

Access control to specific complex areas will be maintained through the MCCC. Scheduled and/or unscheduled maintenance will not be accomplished concurrent with this activity until reviewed and approved by the Deputy Commander for Maintenance (LGM), SMW Safety and the Single Manager.

7.0 Document Review

The Single Manager, the Weapon System Engineer and the MCCC will jointly review all Management and Engineering Test Plans. Any on-site technical changes will be coordinated and approved by the Single Manager

and the SMW Technical Engineering Division (LGME). Any changes affecting safety will receive the concurrence of the MCCC and SMW Safety personnel.

#### 8.0 Emergency Assistance

SMW will provide emergency first aid assistance and facilities, as required. The Single Manager will assist and advise the SMW crew members who comprise the Emergency Assistance Team.